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EXAMINER

WANG, JIN CHENG

ART UNIT

PAPER NUMBER

2672

13

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/976,274

Applicant(s)

PARK, HYUN-SOO

Examiner

Jin-Cheng Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Applicant's Petition/Supplemental Response*

The petition filed March 25, 2004 has been treated as a request for reconsideration of the finality of the rejection mailed January 16, 2004, which has been deemed to be persuasive. Accordingly, the finality of the last Office Action (paper #8, mailed January 16, 2004) has been withdrawn.

The rejection has been clarified and is set forth below. This action is also responsive to the supplemental response filed April 13, 2004.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheney et al.

U.S. Pat. No. 6,519,283 (hereinafter Cheney).

3. Claim 1:

Cheney teaches an apparatus for processing a signal (e.g., column 4, lines 28-57),  
comprising:

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A signal-dispensing unit for dispensing an output signal output from a personal computer in the form of an analog or digital signal (e.g., figures 2-5; column 3, lines 22-40; column 5; column 6, lines 7-25; column 7, lines 19-37);

A signal processing unit for performing picture-in-picture signal processing (e.g., figures 2-5; column 5; column 6, lines 25-67) enabling one of a digital personal computer signal generated by the signal dispensing unit and a decoded first signal input from an outside source to be displayed on a main screen and the other to be displayed on at least one sub-screen (e.g., column 5-6; column 7, lines 19-37), and for processing the first signal to be displayed along on the main screen, the first signal being any one of a television signal and a video signal (e.g., figures 2-5; column 6, lines 25-67);

An output unit for outputting an analog personal computer signal generated from the signal dispensing unit in response to a control signal for displaying only the personal computer signal, and outputting an output signal of the signal processing unit in response to a control signal for displaying the personal computer signal and the first signal in picture-in-picture format (e.g., figures 2-5; column 7, lines 1-37); and

A monitor for amplifying (i.e., scaling) the signal output from the outputting unit to be displayed (e.g., figure 3-5; column 6, lines 25-67; column 9, lines 15-67; column 10, lines 1-67; column 11, lines 1-5).

**Claim 2:**

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a signal conversion unit for converting the picture-in-picture signal output

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from the signal-processing unit into an analog signal before a signal is output from the outputting unit. However, Cheney further discloses the claimed limitation of a signal conversion unit for converting the picture-in-picture signal output from the signal processing unit into an analog signal before a signal is output from the outputting unit (e.g., figure 2 and column 6, lines 1-50).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal; and a signal processing unit for performing a picture-in-picture signal process on the first signal whose scan rate is converted and the digital personal computer signal, so that one of the first signal and the digital personal computer signal is displayed on the main screen and the other of the first signal and the digital personal computer signal is displayed on the plurality of sub-screens, or for processing the first signal to be displayed along on the main screen.

However, Cheney further discloses the claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal (e.g., figures 2-5; column 5-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-67); and a signal processing unit for performing a picture-in-picture signal process on the first signal (e.g., figure 3-5; column 5; column 6, lines 25-67) whose scan rate is converted and the digital personal computer signal, so that one of the first signal and the digital personal computer signal is displayed on the main screen and the other of the first signal and the digital personal computer signal is displayed on the plurality of sub-

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screens (e.g., figures 3-5; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8), or for processing the first signal to be displayed along on the main screen (e.g., figure 5; column 7, lines 19-37).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal.

However, Cheney further discloses the claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal (e.g., figure 5; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 2 except additional claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal.

However, Cheney further discloses the claimed limitation of a decoding unit converting the first signal into a digital signal and decoding the first signal; a scan rate conversion unit for converting a scan rate of the decoded first signal (e.g., figure 5; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8).

4. Claims 6-9:

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Each of the claims 6-9 is a rephrasing of claim 1, 2, 4 and 5 in a method form. The claims 6-9 are rejected for the same reasons set forth in claims 1, 2, 4 and 5, respectively.

5. Claims 11-13:

Each of the claims 11-13 encompasses the same scope of invention as that of claims 1, 2, 4 and 5, respectively. The claims 11-13 are rejected for the same reasons set forth in claims 1, 2, 4 and 5.

Claim 14:

The claim 14 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the video signal being selected from the group consisting of a television video signal and non-broadcasted video signal.

However, Cheney further discloses the claimed limitation of the video signal being selected from the group consisting of a television video signal and non-broadcasted video signal (e.g., column 3, lines 22-40).

Claim 15:

The claim 15 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of an analog to digital converter unit converting the output signal from the signal dispensing unit from an analog signal into a digital signal for the signal processing unit; and a digital to analog converter unit converting the output signal generated from the signal dispensing unit from a digital signal into an analog signal for the outputting unit.

However, Cheney further discloses the claimed limitation of an analog to digital converter unit converting the output signal from the signal dispensing unit from an analog signal into a digital signal for the signal processing unit (e.g., column 5-7); and a digital to analog

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converter unit converting the output signal generated from the signal dispensing unit from a digital signal into an analog signal for the outputting unit (e.g., column 5-7).

***Remarks to Arguments Filed 11/25/2003, Paper no. 7***

6. Applicant's arguments, filed 11/25/2003, paper number 7, have been fully considered but they are not deemed to be persuasive.

7. The Applicant argues in essence with respect to newly amended claim 1 and similar claims that:

"However, in claim 1, the signal processing unit performs the picture-in-picture signal processing and then the outputting unit outputs either the "un-processed" personal computer signal generated from the signal dispensing unit or the picture-in-picture formatted signal from the signal processing unit."

In response, the examiner asserts that Cheney meets the claim limitation set forth in the claim 1 as the claim 1 called for "an outputting unit outputting the output signal of the personal computer signal generated from the signal dispensing unit in response to a control signal for displaying only the personal computer signal, and outputting an output signal of the signal processing unit in response to a control signal for displaying personal computer signal and the first signal in picture-in-picture format." Applicant argues that the outputting unit outputs either the "un-processed" personal computer signal generated from the signal dispensing unit or the picture-in-picture formatted signal from the signal processing unit. First of all, this argument is NOT exactly found in the claim 1 as a claim



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limitation. Second, as can be clearly seen in column 1 and 2 of Cheney, Cheney teaches displaying the computer graphics image and the video image in multiple screens simultaneously or in picture-in-picture formats. Furthermore, in column 7, Cheney teaches pixel select control selecting one of the computer signal or the TV signal and then blended with the computer graphics signal. Therefore Cheney teaches an outputting unit (Fig. 5) outputting the output signal of the personal computer signal (forwarding uncompressed signal for display in mode 2) and outputting an output signal of the signal processing unit in response to a control signal for displaying personal computer signal and the first signal in picture-in-picture format (supporting picture-in-picture display in mode 3). Cheney therefore teaches that the uncompressed signal (computer signal) can be displayed independently from the compressed signal (TV signal). Furthermore, Cheney also teaches that OSD graphics can be used to put a border around the computer signal. Therefore, Cheney clearly meets the claim limitation as claimed.

8. The Applicant argues in essence with respect to the amended claim 1 and similar claims that:

“Cheney fails to disclose both an output signal from a personal computer and the first signal being one of a television signal and a video signal as claimed in claim 1 and therefore fails to show the signal processing unit performing a picture-in-picture signal processing of the output from personal computer and the first signal (being any one of a television signal and video signal).”

This is not found persuasive for the following reasons:

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Cheney clearly teaches an output signal from a personal computer (uncompressed signal for display in mode 2) and the first signal (the compressed signal for display in mode 1 and 3). Cheney clearly teaches the uncompressed signal which is a personal computer signal and a compressed signal which meets the claim limitation of “a first signal” being any one of a television signal and a video signal because Cheney’s decompressed signal comes from the digital video from CABLE or SATELLITE and therefore the compressed signal is one of a television signal and a video signal.

9. The Applicant argues in essence with respect to the amended claim 1 and similar claims that:

“Cheney fails to disclose the monitor for amplifying the signal output from the outputting unit...”

This is not found persuasive because Cheney meets the claim limitation of “the monitor for amplifying the signal output from the outputting unit. For example, in column 10 and 11, Cheney clearly teaches a decimation unit 682 which functions as part of video, display unit 690 when retrieving data for display and the video data comprising full-size scan lines is retrieved from frame buffer storage 653 and fed through decimation unit 682 for B-frame *re-expansion* of pictures. Cheney further teaches video scaling mode. When in *video scaling mode*, decoded video comprising *scaled* (both amplifying and reducing the image sizes) scan lines is retrieved from frame buffer storage 653 and fed directly to scan line video buffers 684.

10. The Applicant argues in essence with respect to claims 2 and 15 that:

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“...The outputting unit was explained by the Examiner as being the MUX 202 of figure 5, the clearly D/A conversion is not made before the outputting unit.”

This is not found persuasive for the following reasons:

In response to the applicant's argument, the examiner urges the applicant refer to figure 2 because the MUX 202 is within one embodiment of 106 in figure 6. Cheney clearly teaches a signal conversion unit (which is either the MUX 202 itself or the D/A conversion unit incorporated in figure 2 wherein the outputting unit comprising multiple blocks as indicated in figure 2). In any case, Cheney clearly meets the claim limitation of “a signal conversion unit” and the signal has to be converted before a signal is output to a television. Cheney clearly teaches the D/A conversion multiple occasions, for example, in figure 2 and in column 6, Cheney teaches *digital-to-analog conversion of the video signal occurs prior to output 110 to the television system*. Cheney clearly teaches an *A/D video decoder* that meets the claim limitation of “an analog to digital converter unit” (See column 5-6 and 18) as well as a *D/A video encoder* that meets the claim limitation of “a digital to analog converter unit” (See column 5-6 and 18).

11. The Applicant argues in essence with respect to claims 3-5 that:

“...Cheney fails to disclose the decoding unit as arranged in the claim. In Cheney a unit does not take the TV/video signal (first signal) and converts to a digital signal and decodes the first signal...Cheney also fails to disclose a scan rate conversion unit that converts the scan rate of the decoded first signal.”

This is not found persuasive because Cheney clearly meets the claim limitation set forth in the claims 3-5. Cheney clearly teaches a decoding unit in both figure 2-5 and column 7. Through the

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memory controller, video and computer signals fed to the unit for processing which is clearly taught by Cheney. In addition, Cheney clearly teaches scan rate conversion in for example column 9 and 10. Cheney teaches digitizing the *analog* video signal for input to the digital video processing system. Moreover, Cheney clearly teaches an *A/D video decoder* that meets the claim limitation of “an analog to digital converter unit” (See column 5-6 and 18) as well as a *D/A video encoder* that meets the claim limitation of “a digital to analog converter unit” (See column 5-6 and 18).

***Remarks to Arguments Filed 04/13/2004, Paper no. 12***

12. Applicant's arguments, filed 04/13/2004, paper number 12, have been fully considered but they are not deemed to be persuasive.
13. The Applicant argues in essence with respect to the claim 1 and similar claims that:  
(A) “Cheney fails to disclose an output unit the present invention as related with the signal dispensing unit and the signal processing unit (e.g., claims 1, 10)...However, looking at col. 7, Cheney states that the 2:1 multiplexer MUX 202 has one input for the decompressed video derived from the MPEG stream and a second input that has the uncompressed video which is ‘the analog (or digital) signal received through DMSD 105’, where the DMSD is the digital multi-standard decoder. The MUX 202 must have the same type signal in order to multiplex the signals. The decompressed MPEG signal is in a digital format, therefore the uncompressed video must also be in digital format or at some point converted into digital format from the original analog. Otherwise, if one is digital and the other is analog, the timing would be off, and it would be impossible to

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multiplex the two types of signals in the MUX 202. Therefore, the MUX 202 is receiving only digital type signals.”

In response to the arguments in (A), as regards to the signal processing within the MUX 202, Applicant should refer to column 7, lines 19-37 of Cheney, which describes the Fig. 5.

In Fig. 5 and column 7, lines 19-37 of Cheney, the video decoder/display and OSD logic 106 is modified to include the merging and blending capabilities. Cheney teaches that, in this embodiment, a 2:1 MUX 202 as controlled by a processor generated “pixel select control” signal selects between the decompressed digital video, i.e., the decompressed video derived from the MPEG stream received through transport 103, or the uncompressed video, i.e., the analog (or digital) signal received through DMSD 105.

Applicant argues that the MUX 202 is receiving only digital type signals. This argument is found to be INCORRECT, as evidenced by the teaching of Cheney. For example, Fig. 5 clearly shows that the MUX 202 takes as input both decompressed digital video and the analog signal received through DMSD. Applicant argues that the uncompressed video must also be in digital format or at some point converted into digital format from the original analog. In contrary to the Applicant’s assertion that there must be an analog to digital conversion within MUX 202, Cheney does not explicitly disclose an analog to digital conversion unit within the MUX 202 (Fig. 5 and column 7, lines 19-37).

14. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(B) “Col. 8, lines 29-32 of Cheney supports the above, by stating, ‘a digital multi-standard decoder (DMSD) chip which then digitizes the incoming video and sends the digitized video to the integrated decode system for blending of video signals and mixing of graphics.’ Therefore, both inputs are digital in order for the multiplexer MUX 202 to properly work.”

In response to the arguments in (B), Applicant is urged to refer to Fig. 5 and the corresponding description of Cheney in column 7, lines 19-39. Cheney describes Fig. 5 as one embodiment, which modifies the video decoder/display and OSD logic 106 to incorporate the circuit elements of Fig. 5. Cheney teaches that the MUX 202 *selects* between the digital signal received through transport 103 and the analog signal received through DMSD 105. Cheney further teaches the ‘pixel select control’ has three modes of operation which are set by the host processor and the host processor can *set the pixel select control* to (1) *forward the decompressed video on to display*, (2) *forward the uncompressed video on to display* or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display and switching between decompressed and uncompressed video for simultaneous display at a rate according to the desired locations of the secondary picture (see Fig. 3).

15. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(C) “Therefore, what Cheney is actually referring to is the ‘original analog signal’ coming from the uncompressed video which is then digitized for the MUX. After the MUX multiplexes the signals into a single signal, the output of the MUX has to converted

back into analog as shown for example by reference 59 of figure 2 of Cheney which does a Digital to Analog conversion for the video display. In col. 6, lines 46-50, Cheney states that digital to analog conversion of the video signal (the decompressed MPEG) occurs prior to output to the television. Therefore, Cheney still processes all of the signals (the decompressed video alone or the uncompressed video alone or the blended or multiplexed output of the two signals), thereby reducing the resolution as compared to the present invention.”

In response to the arguments in (C), Cheney teaches in column 6, lines 51-67 that the other picture to form the picture-in-picture display is received as an uncompressed video signal through, for example, the external graphics/video port and alternatively, a dedicated port could be constructed by one skilled in the art for input of the uncompressed video signal to the integrated digital processing system, including *the video decoder*. Cheney further teaches that this uncompressed signal is received from a second video source and may either comprise another digital signal or an analog signal. In the arguments presented in above, Applicant has focused on some embodiments of Cheney for the argument’s sake. However, applicant failed to provide support to his assertion that Cheney’s apparatus reduces the resolution as compared to the claim invention.

16. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(D) “...As stated in the description of the related art (paragraph 0005), the present invention clearly mentions this problem with the related art such as Cheney...a signal is

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displayed on the CDT screen after being converted into a digital signal, processed with a PIP process in the scaler IC, and then converted back into an analog signal. During these processes, screen image quality may be degraded.”

In response to the arguments in (D), the Examiner disagrees with applicant’s characterization of the Cheney reference. Cheney teaches the MUX 202 has analog input and analog output. Even though the analog output from the MUX 202 is directed to the DENC 107, it is not converted by the encoder, because DENC 107 does not convert analog signals. In contrary to the Applicant’s assertion that there must be an analog to digital conversion within MUX 202, Cheney does not explicitly disclose an analog to digital conversion unit within the MUX 202 (Fig. 5 and column 7, lines 19-37).

17. The Applicant argues in essence with respect to the claim 1 and similar claims that:  
(E) “The Examiner stated on pages 7-8 in the remarks section of paper no. 8 that the Applicant argues that the outputting unit outputs either the ‘un-processed’ personal computer signal...”

In response to the arguments in (E), the Examiner asserts that the limitation “unprocessed” is not found in the claim. The claim limitation, however, recites “analog” instead of “unprocessed.” Therefore the Examiner asserts that this argument is NOT exactly found in the Claim 1.



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18. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(F) “However, as mentioned above, although the MUX can select the signals, the MUX uses digital signals in order to multiplex the signals or select between. Therefore, at some point before the MUX, e.g., DMSD 105, an analog input is converted into a digital format for multiplexing.”

In response to the arguments in (F), Cheney teaches in Fig. 5 and column 7, lines 19-37 the MUX 202 takes as input an analog signal and a digital signal and the MUX 202 multiplexes the analog input signal and the digital input signal. Applicant continues to argue that the analog input should be converted to a digital format within MUX 202 in order for the multiplexing to work. Applicant argues that at some point before the MUX 202, e.g., DMSD 105, an analog input is converted into a digital format for multiplexing. However, the analog input signal is directly passed to the MUX 202 because Cheney teaches the MUX 202 directly receives an analog input signal from DMSD 105 (see Figure 5). Applicant failed to provide support to his assertion that the analog input is converted before multiplexing. In contrary to the Applicant’s assertion that there must be an analog to digital conversion before MUX 202, Cheney does not require an analog to digital conversion for the uncompressed signal as input to the MUX 202 because the uncompressed analog signal is directly fed to the MUX 202 (See Fig. 5 and column 7, lines 19-37).

19. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(G) “Cheney fails to disclose separate signal processing and outputting unit (e.g., claim 1) and thereby having reduced image quality.”

In response to the arguments in (G), Applicant failed to provide support to his argument that Cheney’s apparatus reduces image quality. In fact, Cheney teaches a signal processing and an output unit as claimed. The limitation of “separate” in the argument is NOT found in the claim. In fact, Cheney teaches the functions performed by a signal processing unit and an outputting unit and therefore Cheney meets the claim limitation of “a signal processing unit” and “an output unit”. The MUX 202 and/or OSD blend 204 (and/or incorporating DENC 107 and VIDEO DECODER 106 of Figure 4) implementing the function of outputting to (directly or indirectly) the television performs the function of the outputting unit as claimed and therefore constitutes the output unit. The MUX 202 and/or OSD blend 204 (and/or incorporating DENC 107 and VIDEO DECODER 106 of Figure 4) implementing the switching/selecting of the signals performs the function of the signal processing unit as claimed and therefore constitutes a signal processing unit.

Applicant failed to establish support to his argument that Cheney’s apparatus reduces image quality and is thus found not persuasive. The MUX 202 takes an analog input signal and output an analog output signal, wherein the input signal to the MUX 202 is analog and the output signal is again the analog and the signal processing can be performed without D/A or A/D conversion (See column 7, lines 19-37).

20. The Applicant argues in essence with respect to the claim 2 and similar claims that:

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(H) "Cheney fails to disclose a signal conversion unit (e.g., D/A converter) performing a conversion of the picture-in-picture signal output from the signal processing unit into an analog signal before the signal is output from the outputting unit (e.g., claim 2)."

In response to the arguments in (H), the Examiner asserts that Cheney's apparatus has a plurality of units performing the same functionality as what has claimed in the Claim 2. The Examiner acknowledges that there was a typo in the previous Office Action that the signal has to be converted before a signal is output from the outputting unit such as to the television (See Figure 4). The Office Action has omitted a "to" and Applicant thus pointed out that the Examiner has been inconsistent in the application of the rejection. However, the Examiner is consistent in the application of the rejection.

Applicant further states that a *prima facie* anticipation rejection would be improper because of the inconsistent rejection. However, the Claim 1 is anticipated in view of the Figures 1-5 of Cheney. Cheney clearly teaches a hardware unit comprising the MUX 202 and/or OSD blend 204 (and/or incorporating DENC 107 and VIDEO DECODER 106 of Figure 4) for implementing a conversion of the picture-in-picture signal output after signal selection into an analog signal (See column 8).

21. The Applicant argues in essence with respect to the claim 1 and similar claims that:

(I) "The Examiner further stated on page 10 of paper no. 8 that Cheney clearly teaches the D/A conversion on multiple occasions, for example, in figure 2 and in column 6, Cheney teaches digital-to-analog conversion of the video signal occurs prior to output

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110 to the television system and that Cheney clearly teaches an A/D video decoder that meets the claim limitation of 'an analog to digital converter unit' (See column 5-6 and 18) as well as a D/A video encoder that meets the claim limitation of 'a digital to analog converter unit' (See column 5-6 and 18). However, these explanations by the Examiner is pointing out the Applicant's earlier arguments, in that Cheney has far too many conversions and not in the precise points of the present invention and thereby reducing image quality in Cheney. It is not important whether simply a D/A converter is disclosed, but that the D/A converter must be disclosed as arranged in the claim according to MPEP 2131."

In response to the arguments in (I), the Examiner asserts that Cheney's apparatus meets the claim limitation. According to the applicant arguments, the claim invention recites both D/A converter and A/D converter and therefore the claim invention suffers too many conversions, and thus the screen image quality may be degraded. Applicant asserts that Cheney has both D/A converter and A/D converter, thereby reducing image quality.

However, Applicant's claim invention also requires both D/A converter and A/D converter, as evidenced in the claim 1 and claim 2. For example, Applicant's claim 1 set forth the limitation of "decoded first signal input from an outside source." By the claim limitation, there is an A/D conversion for the first signal input from an outside source. Moreover, Applicant's claim 2 set forth the limitation of "a signal conversion unit for converting the picture-in-picture signal output from the signal-processing unit into an analog signal before a signal is output from the

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outputting unit.” By the claim limitation, there is a D/A conversion for converting the digital signal output from the signal-processing unit into an analog signal.

In Cheney, when an analog signal is input to the encoder 107 of Figure 4, the output signal from the encoder 107 is still an analog signal, which is then directed to the television (See Fig. 4 and column 7).

As per claim limitation, Cheney clearly teaches a hardware unit comprising the MUX 202 and/or OSD blend 204 and/or DENC 107 and VIDEO DECODER 106 of Figure 4 for implementing a conversion of the picture-in-picture signal output after signal selection into an analog signal. This arrangement or any other alternative arrangement under different interpretation meets the claim limitation set forth in the claim 1 and claim 2 because the elements within Cheney’s apparatus exactly perform the same functions as in the claim 1 and claim 2 (see column 7-8).

### *Conclusion*

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw  
May 19, 2004

  
JEFFERY BRIER  
PRIMARY EXAMINER